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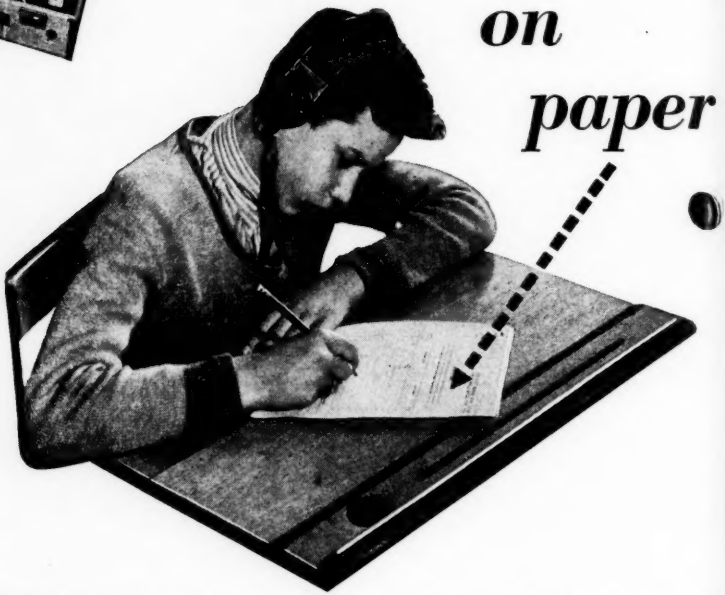
It puts their ears on paper



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THE JOURNAL OF SCHOOL HEALTH

Devoted to the interests and advancement of school health service and instruction. Your participation by membership is solicited.

Vol. XII DECEMBER, 1942 No. 10

TESTING TECHNIQUES AND PROCEDURES DEVELOPED FOR THE MASSACHUSETTS STUDY OF HEALTH IN SENIOR HIGH SCHOOLS*

WARREN H. SOUTHWORTH, B.S., M.A.

Formerly Research Learning Consultant for the Massachusetts Department of Public Health, and now Professor of Health Education at Panzer College of Physical Education and Hygiene, East Orange, New Jersey.

This paper deals with the mechanics of this Massachusetts study of health in high schools from the point of view of one who for over a year has had day by day contact with its intricate details.

"The Principal's Outline for Study of the School Health Program," which was sent to every high school in the State, is a questionnaire inquiring about the present school health programs. It is designed on the basis of a multiple-choice type of question, in order to obtain a maximum of accurate and complete information with a minimum of effort on the part of the principal. Each question is accompanied by several answers, and the principal is asked to indicate the answer or answers which represent the situation in his school. For exceptional circumstances there is space under the category of "others" at the end of each list of answers. A typical question reads:

Who supervises or directs the health education program for the school system? (check)

a. No health education supervisor
b. Full-time health education supervisor
c. Supervisor of physical education
d. Home economics or nutrition supervisor
e. Nurse
f. School physician
g. Others (specify)

With such an arrangement of questions and answers, no essay answers are necessary. The "Outline" is divided into sections to

*Presented before the Second General Session of the American School Health Association, Friday, October 30, 1942.

facilitate the principal's conferences with the members of his staff who are best qualified to assist him in answering each section. The four sections are: A—Instruction, B—Health Services, C—Health Protection in the School Day, and D—Administration of the School Health Program. The time required for completion of a single "Outline" is from one and a half to two hours.

The returned questionnaires were classified into four groups according to the population-size of the communities from which they came.

Group 1—Communities of 25,000 population and over.

Group II—Communities of 10 to 25,000 population.

Group III—Communities of 5 to 10,000 population.

Group IV—Communities of less than 5,000 population and supporting a high school.

The percentage of returns varied from 87% to 93% among these four groups, and for the State as a whole 230 of the 260 high schools returned completed "Outlines." An 89% return on such an extensive questionnaire was indeed gratifying, and expressed the interest and co-operation of high school principals.

To secure some objective measure for scoring the different high school health programs, twenty-five questions were selected as indicative of the basic elements around which a sound, effective school health program should be built. In consultation with school health specialists in the Committee and in the Departments of Education and Public Health, the desirable response to each of the twenty-five questions was established. The score for each questionnaire or "Outline" was determined by totaling the number of correct responses. Twenty-five, therefore, was the highest possible score. In this study the highest score attained on any questionnaire was 18, and the lowest 3.

A high score does not necessarily mean that the total school health program is a good one, but it does mean that certain of the essential elements of a health education program are present. Moreover, whether or not the program is a substantial one depends on all of the factors involved and the extent of the planning, supervision and co-ordination of all parts of the program. The following slides present the twenty-five questions, with the choice of answers, and the "standard answers" indicated either by parentheses or underlining.

SLIDE 1

1. Is there a course of Health Instruction (accept either a or b).

a (Is there a separate course in health instruction? *Yes*—No.
(Is the course elective or required? Elective—*Required.*
(Is there an integrated course in health instruction? *Yes*—No.
b (Is there a committee in charge of integrating the lessons into a unified whole. *Yes*—No.

2. Are health textbooks used, and is there a textbook available for each pupil receiving health instruction? *Yes*—No; *Yes*—No.
3. Are films, posters and exhibits used as teaching aids in health instruction? *Yes*—No; *Yes*—No; *Yes*—No (all three).
4. Is there health teaching done through field trips, radio programs, and special lecturers?

SLIDE 2

5. Is time allotted to health instruction in the junior high school grades . . . 7, 8 and 9? (Indication of amount of time.)
6. Is time allotted to health instruction below the junior high school . . . grades 1, 2, 3, 4, 5 and 6? (indication of amount of time.)
7. Are health textbooks used in the elementary grades? *Yes*—No.
8. Are health textbooks used in the junior high grades? *Yes*—No.

SLIDE 3

9. Is someone in direct supervision of the health education program for the whole school system? (Anyone on list in questionnaire except school physician.)
10. Is there a physical education program which extends through all grades of the high school? (Indication of time spent by each pupil each week in physical education.)
11. How much time is allowed per health examination? (accept 6 minutes or more per examination.)
12. Do pupils re-entering school after 3 or more days' absence report to the medical or nursing service? *Yes*—No.
13. Are health certificates required of high school teachers? *Yes*—No.

14. Is a chest X-ray part of the requirements for teacher health certificates? *Yes*—No.

SLIDE 4

15. Are there free clinics available to high school pupils? *Yes*—No. (with checking of more than one of those listed in questionnaire.)
16. When are teachers notified of physical defects of pupils? *Always*—Occasionally—Never.
17. Do teachers concern themselves with the health of pupils in their home-room groups? *Yes*—No.
18. Is there a nutritionist working among pupils in the high school? (Accept any checked on list in questionnaire.)
19. Does the school keep a record of those who have an annual dental examination by family dentist? *Yes*—No.
20. Is dental prophylaxis by a dental hygienist available for high school pupils? *Yes*—No.

SLIDE 5

21. Is provision made for pupils who can not afford to purchase a lunch? *Yes*—No.
22. Is there a plan in the school to check the quality of the lunches selected by pupils? Daily—Periodically—None (Accept daily or periodically or both.)
23. Is the lunch period at the same time each day for an individual pupil? *Yes*—No.
24. Is there a student and/or faculty health council? *Yes*—No; (accept either one or both.)
25. Did the school participate in any specific community health campaigns last year? *Yes*—No.

No school rated a score above 20 (80%) and most schools possessed from 5 to 16 of the desirable activities. This was true not only for the high schools of the State as a whole, but for the schools in communities of different sizes. A large per cent of high schools had some of the essential elements of a good health program, but only 10% of the schools had more than 15 of the 25 factors included in the "standard."

Whereas the first part of this whole study was conducted in practically all of the high schools in Massachusetts, it is evident that an inquiry into the physical health and health education status of high school pupils would have to be limited to a carefully selected group of schools in representative communities throughout the

State. On a basis of their school size, type, geographical location, and economic status of community, twenty-seven schools, with approximately 9% of the public high school population for the entire State, were selected as a statistical sample of Massachusetts high schools. There was one or more schools from each of the 12 mainland counties of the State. Schools from communities of different economic levels were selected by reference to the Department of Education listing of communities according to the valuation per pupil. The different types of communities were:

1. Industrial
2. Rural
3. Residential
4. Industrial-rural
5. Industrial-residential

The questionnaires from these schools, when compared to the State as a whole, gave full assurance that they are a representative sample.

Now, let us consider the procedures and techniques used in studying the physical health status of high school pupils. The Committee's original objective in investigating the distribution of physical defects was to indicate where the school and community need to increase their efforts and facilities for the detection, follow-up and subsequent correction of physical defects. For twenty-two of the schools selected for intensive study by the Committee, a summary was made of the physical defects among boys and girls by reviewing with the school nurse the results of the most recent health examination given at each high school within the previous twelve months. A total of 4194 "Physical Record Cards" of cross sectional groups of boys and girls in the 10th, 11th and 12th grades were reviewed, with a maximum of 225 cards and a minimum of 50 cards from any one school.

The physical defects indicated on the cards are those related to the following areas: feet, glands, hearing, heart, lungs, nose, posture, scalp, sight, skin, teeth, eye diseases and ear diseases. Of the fourteen areas recommended on the Physical Record Card issued by the Department of Education and developed by the Department of Public Health, four schools in this study examine for only 1 to 5 types of defects, fifteen schools examine for 6 to 10 types of defects, and three schools examine for 11 to 14 types of defects.

In the 1942 Yearbook of the American Association of School Administrators (Health in Schools), it is stated: "In addition to

appraising the health status of pupils, the school health examination is now recognized as an educational experience contributing to the pupils' understanding of health. It influences their attitudes toward health and toward physicians and nurses; it affords opportunities for giving information related to their individual problems." It is also believed that the high school pupil is mature enough to be one of the major directional factors in securing correction of his own defects, and that, consequently, his *awareness* of the existence of his physical defects is important.

All of the pupils who took the health quizzes, which I shall describe later, were asked to fill in a "Pupil's Check list of Physical Defects." This "Check list" contained a list of the principal items or areas in a school health examination. Each pupil was directed to read the list and to indicate, with a check mark, each item for which he believes he has a physical defect, and to check any of those defects which have been placed under treatment since the last school health examination. The pupils were asked not to put their names on the papers. The "check-lists" from 2033 pupils in twelve different high schools were compared with the Physical Record Cards of individual pupils to determine the extent of individual pupil awareness or consciousness of the physical defects noted and recorded at the school health examination.

The Committee chose to determine the health education status of high school boys and girls through their health practices, health knowledge, health interests and health attitudes. This was accomplished by means of objective paper and pencil tests or quizzes. Since there were no suitable objective tests available, the Committee developed its own health quizzes which could be used in Massachusetts high schools. The Chicago Co-operative Study and the makers of the Moore-Cottle Test generously allowed us to draw upon material in their health tests.

The first quiz is entitled: "What Do You Do?" and is a check-list of the pupil's *health practices.* The pupil responds by indicating whether he always, occasionally, or never follows each of the activities listed in the quiz. The first few items in this quiz are:

Eat some fruit or vegetables every day
Keep erect when sitting
Eat your meals at the same time each day.

You will probably recognize the source of inspiration for the title of the second quiz. It is called "Health Information, Please!" It inquires into the pupil's *knowledge* about health through both true-false questions and multiple choice questions, such as:

Green vegetables are low in fuel value

A clean tooth never decays
For the best source of protein choose:
a. Eggs and meat
b. Potato and bread
c. Cabbage and lettuce
d. Bacon and butter

"Your Choice, Please!", the third quiz, gives the pupil an opportunity to indicate whether or not he would be *interested* in learning the scientific facts behind certain health questions. Some of the questions in this quiz are:

1. How should one select a physician?
2. Are pimples caused by poor digestion?
3. How can athlete's foot be avoided?

In addition, the pupil is asked to list any questions which he especially would want to have answered in a high school health course. "Your Opinion, Please!", number four in the series, is designed to measure pupil *attitudes* toward health as it applies to human living and health as a subject of instruction. This quiz contains statements about health, and the pupil indicates whether he agrees, is uncertain, or disagrees with such statements as:

A high school student should play at least one sport which he will be able to carry on after school days are over.
All high schools should offer a course of health.
Each high school student should have a hobby.

All of the quizzes are designed for scoring by an electrical scoring machine, so that large numbers of pupils can be tested without involving an enormous amount of manual scoring. The ninety questions for each quiz are included in a booklet, and the pupil is directed to indicate his answers on a separate answer sheet with a mechanical pencil. For each possible answer to a question in the booklet there is a properly numbered space on the answer sheet. The pupil indicates his answer to a question by blackening one of the spaces on the answer sheet numbered the same as the question. A special lead, P 3 B—that's not a priority number—with a high electrical conductance, has to be used for marking the answer sheets if they are to be scored electrically. The scoring machine, the envy of all teachers, is set to record only the correct answers. When an answer sheet is put into the machine, each of the blackened spaces which represent correct answers, completes an electrical circuit. The more completed circuits there are, the greater will be the current which reaches the meter. The meter can be adjusted to read directly in terms of per cent.

This process insures a high degree of accuracy in scoring the answer sheets. Another valuable feature of the electrical scoring machine is its graphic item counter which will give a bargraph representation of the total correct responses made on each question by any group of pupils.

In the high schools of the statistical sample, the health quizzes were given to a total of over 10,000 pupils in grades 10, 11 and 12. That's no small sample. Each home-room teacher administered the quizzes to the pupils in her room with the aid of a guide constructed especially for administering these quizzes. In addition to specific directions for quizzes which are electrically scored, the guide contains a numbering system, so that pupils instead of placing their names on the answer sheets used numbers which served as a means of keeping the papers from a single pupil together. To get truthful, straight-forward answers, pupils were not asked to put their names on the answer sheets because of the personal nature of some of the questions. Numbers were used on the "Check-list" likewise.

The entire testing program extended over a three-month period. The quizzes were given in sets of two's, one week apart, and the "Pupil's Check-list of Physical Defects" was included with the second set of health quizzes. The Committee's research consultant made a preliminary visit to each school to prepare for the school's participation in the study, and he was also present when the quizzes were administered, in order to maintain standard procedures.

After the quizzes were scored, a punch card was made for each pupil, and on it was placed such information as: the school, type of community, sex, age, grade, home-room number, pupil's number, pupil's score on each test and his intelligence quotient. The 10,000 cards were sorted and basic data were obtained for the computation of averages, standard deviations and coefficients of correlation between health practices, health knowledge, health attitudes and general intelligence of boys and girls in grades 10, 11 and 12. The coefficients of correlation were computed by the product moment method. These data will be discussed in detail by Dr. Clair E. Turner. (In a paper appearing next month. Ed.)

In closing this summary of the techniques and procedures developed for the Massachusetts Study of Health in high schools, I want to acknowledge the technical assistance rendered by some of the individual members of the Committee, and by Dr. Mayhew Derryberry of the United States Public Health Service.

SCHOOL PROGRAM OF THE MILK FOUNDATION BUILDS FOR LASTING VALUES THROUGH INTEGRATED HEALTH PROJECTS

By CARL F. DEYSENROTH

Educational Director, The Milk Foundation, Chicago, Ill.

From the youngsters in the nursery schools to the students in junior college classes, the million school age boys and girls in the thousand Public, Parochial, Suburban and Lutheran schools within the Chicago area are learning of the importance of good health and nutrition in everyday living.

Much of this has come about through the activities of the Milk Foundation, for this non-profit organization has, under the direction of Carl F. Deysenroth, executive secretary, done a great deal to stimulate and keep alive student and teacher interest in health through a co-ordinated school program.

First of all, there is a felt need for just such a program. And, in filling that need, the Foundation—by means of personal contact work in the schools, by grading its school projects to the various age and grade levels and, above all, by planning its material to integrate with the regular school subjects has, according to one principal, "conceived a complete supplementary health education service with a definite teaching value."

How does such a program operate?

In the beginning (ten years ago) through a program of intensive study, and by means of visits with principals, teachers, and educational leaders in every type of locality, the School Service Department of the Milk Foundation was able to base its production of school projects on the most typical needs.

Then, for the teacher, a magazine entitled, "Educational Health Activities" was evolved and continued to flourish. This magazine goes to every teacher in the Chicago area school systems three times during the school year.

In addition to containing current nutritional and academic data, "Educational Health Activities" features photographs and news stories of the outstanding health programs that are being conducted in the schools, thus helping the individual teacher keep abreast of the latest theory and practice in health education.

Moreover, this publication contains descriptions of the graded leaflets and posters furnished free on request. From this, the teacher makes her selections, suiting her choice to the grade and curriculum level of her group.

In response, she is sent a supply of material which, with specific teaching units, becomes an integral part of the class activities. For example, the Kindergarten teacher receives a set of eight fullcolor posters that teach the children, by means of accompanying seatwork, how closely their friends, the farm animals, adhere to the good health habits; in the first grade, the children receive individual reading leaflets and seatwork material, and for the room, there is sent a large sized reading chart; second grade pupils receive reading lessons keyed to their vocabularies; third graders get an activity project that in addition to factual material on health, contains objective tests on health and reading skills; the fourth grade project, with its accompanying poster, may stress the importance of teeth—their development and care; currently in the fifth grade, the students receive individual material entitled, "Good Neighbors, All". This colorful booklet has as its basis the work of the Pan American Union and thus, correlates health education and the social studies. Sixth grade students receive a project which contains much factual information on health and safety, and it, too, has the objective tests which help to simplify the teacher's work. Seventh and eighth grade students currently receive a nutrition project that stresses the importance of wise food selection. Other upper grade materials have featured the important relationship between health and personality, while still others have dealt with the social sciences and related material.

The success of such concentrated effort can be interpreted through the words of Zachary Chandler, principal of the Sawyer Avenue grammar school: " . . . we have found that the posters and individual reading material that is furnished by the Milk Foundation are very successful in augmenting the regular school health program. In the lower grades, the children enjoy reading and coloring the material and following suggested activities. In the upper grades such material helps the children to select their foods more wisely and it also makes them more conscious of the desirable health habits. Furthermore, these materials furnished by the Foundation are considered so valuable that they are sent home, and thus they aid in working toward a deeper and stronger co-operation between home and school."

But the school program of the Foundation does not stop with the eighth grade. As a part of its regular high school campaign last year, it sponsored, in co-operation with the department of Lunch Rooms of the Chicago Board of Education, *The Milk Quota Contest for Better Health.*

This contest was designed to build up per capita consumption of milk with the resultant higher health standards. The methods of procedure were simple, yet carried a high appeal to the members of the student body: the high school which had the highest percentage of increase in milk sales over that of the previous month became the winning school for that month.

Awards were made on a monthly basis, with every student in the victorious school coming in for an individual prize. And for the school which had the greatest percentage of increased milk sales for the entire semester, a Grand Trophy was awarded.

Still another "special event" of the 1942 school year was the "Cow and Calf Project" whereby more than twenty thousand city school youngsters, many of whom had never seen a cow, were enabled to get a first hand view of the source of milk.

This activity was conducted during the week of June 8-12 when it was reasonable to expect fair weather. An open trailer, the sides of which depicted rolling farm scenes, bore "Spot", the cow, and "Frisky", the calf, (both registered Holsteins from the school of Dairy Husbandry at the University of Illinois) to the playgrounds of twenty representative schools where the audience averaged more than one thousand students.

The program consisted of a nutrition talk and the story of milk by Dr. Karl E. Gardner, professor of Dairy Husbandry at the University, a milking demonstration by a dairyman from the University's experimental farm, and what was intensely thrilling to primary youngsters and upper grade students alike, the opportunity of actually petting the calf as he was led around the school yard.

Each school visited was representative insofar as economics, social and material culture, and nationalities and races were concerned. The accomplishments were meaningful and far-reaching, for not only did the project mean a "treat" for city youngsters, but the educational and health achievements were outstanding as well.

Miss Viola Warren, graduate of Northwestern University, is Director of the Milk Foundation's School Health Program. She holds a teaching certificate in the Chicago public schools, and has majored in education at the university. Much of the success of the program carried on by the Foundation is due to her deep understanding of the subject and her creative ability.

The work of the Foundation is financed by the dairy farmers and city distributors of milk in the Chicago area, and while its main purpose is to build up per capita consumption of milk to

those standards recommended by nutritional scientists and government authorities, the entire program of the organization is directed toward the improvement of general health. In short, to "make America strong by making Americans stronger."

* * * * *

ERNST HERMANN—One by one the real leaders in physical education in this country, the ones who lifted it from the status of a hobby—indulged in largely by immigrants who came from Germany and Sweden—to a science, and sold it to the educators in schools and colleges, and raised it to the dignity of a profession, step from the human stage.

Early last September, Ernst Hermann passed to his reward. He came to this country as a young man, was one of the few men graduated from the Boston School of Gymnastics, and, after the death of Dr. Dudley A. Sargent, became Dean of the Sargent College of Boston University, a College of Boston University engaged in training young women as teachers in the field of physical education and physical therapy. He constructed and put into operation the first centrally controlled shower baths, organized, planned, and directed the playgrounds of Newton, Massachusetts, making them a model often copied. He was formerly Director of Physical Education in Newton and in Somerville, Mass.

Thousands who came under his instruction, professional direction or advice will unite in a distinct feeling of personal loss at his decease. C. H. K.

* * * * *

OUR NEW PRESIDENTS

Under the Constitution of our Association, the President-elect, Dr. Clair E. Turner, became President at the close of the business meeting of the Association, held at the annual Convention at St. Louis, Mo.

Clair E. Turner, B.A. (Bates College), M.A. (Harvard University), Dr.P.H. (Massachusetts Institute of Technology). Dr. Turner formerly (1917-1929) was Associate Professor of Hygiene, Tufts Medical School; served in U.S.P.H.S., 1917-1918; is editor of Health Films, Eastman Teaching Films; Trustee Bates College since 1923; Fellow American Public Health Association, and former Chairman of the Public Health Education Section of the A.P.H.A. Member of American Association of Health, Physical Education and Recreation and of Phi Beta Kappa. He is listed in Who's Who in America. Author of several Hygiene texts.

A leader in the fields of Health Education and of Public Health, Dr. Turner brings to the American School Health Association, great ability, knowledge, and a world-wide reputation in his field.

C. Morley Sellery, M.D., was chosen President-elect.

Dr. Sellery is a graduate of Queens University, Canada, A.B. and M.D., was Medical Superintendent, China, 1921-1927, Assistant Director, Health Service Section, Los Angeles Public Schools, 1929-1939, Director, 1940. This Section has charge of the health services, health education, and corrective physical education. President Southern California Public Health Association, 1940; President Council of Directors and Superintendents, Los Angeles Schools, 1942; President, Pediatric Section, Los Angeles County Medical Association, 1942. Dr. Sellery has an established reputation and a record of accomplishment in the field of School Health.

* * * * *

Journals Needed: Will any member or subscriber who has a copy of the Journal of School Health of the date of June, 1939, or of January, 1942, please send it to this office, 3335 Main Street, Buffalo, N. Y. These copies are badly needed. C. H. K., Editor.

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EDITORIALS

The press—daily and magazine, lay and professional—is being swamped with articles on the physical condition of our youth. These range all the way from lamentations over the enormous percentage of our young men who show such serious defects as to prevent their admission to our armed forces—or at least seriously to delay admission—to various schemes for improving the physical and mental stamina and military eagerness of those entering these services.

Many of these plans seem to lack scientific foundation. Too many writers seem to feel that the only need is for us to set aside more school time for physical activities. Partly because the suggestions seem to lack demonstrable efficacy, and partly because school and college faculties dislike to admit that that part of a man below the collar bone is quite as important as the part above, we find that in many places these suggestions for increased time for physical activities are not being received with open arms, to say the least. It seems apparent to some of those who desire better to fit our youth for the struggle for existence which they are now entering that these increased time allotments and more strenuous activities will not even be admitted within the educational tent unless our federal government makes it apparent that a more co-operative attitude toward this part of the war effort must be shown.

This writer would regret any effort of federal power to coerce local education, but the survival of our national life is at stake. Efforts toward evaluation of different types of physical activity, always needed, are particularly in demand in an era when programs

in physical education are being rapidly expanded and intensified. If we are to devote greatly increased amounts of time and largely increased cost of staff to activities designed to "condition"—to improve power, courage, endurance, and stamina—it is essential that we discover several things regarding men and women of military age.

We should know whether the activities prescribed actually do these things. We must answer these questions:

1. What is "condition"?
2. Do the exercises advised or used improve condition?
3. How do we know when an individual is at the peak of his physical and mental condition? C. H. K.

* * * * *

A profession that expanded enormously during and following the World War of 1914-1918, is again rushing forward to meet the need of this present emergency.

In the treatment and after-care of battle injuries, Physical Therapy has a great part to play. The trained nurse and the person trained and practiced in physical education, when given special and intensive training in this field, render a most valuable service in hastening, and in making more complete, recovery from war injuries. Those physicians having special physical therapy training and experience cannot possibly carry out the details of the treatments needed. This duty falls upon the trained technicians. Many problems will arise as to the relationships of the members of this rapidly expanding group—many of them hurriedly trained for the emergency—to those physicians who are responsible for the treatment and hoped-for recovery of injured men.

Co-operative attitudes between physicians and those physical therapists who are also trained graduate nurses are well established. Each group realizes its proper place, duty, and activity in the plans for treatment. Those physical therapists whose basic training has been in the field of physical education, however, will have many new relationships to establish, and many adjustments to make. Few of them are familiar with hospital routines, customs, and responsibilities. Forbearance and courtesy are a necessity on both sides.

Basically, it is not a matter of which group "knows" better than the other. It is not a matter merely of information concerning kinesiology, physiology of exercise, and the mechanical effects of various types of physical therapy, it is a problem in treating the

whole patient. It is also a matter of leadership, direction, and orderly administration. In hospitals, certain lines of control have long been established. In military hospitals these are fixed and immutable. Only as all the parties concerned—physician, nurse, physical educator, physical therapy technician—recognize and work wholeheartedly within these established channels, will the welfare and recovery of the patients best be advanced. C. H. K.

* * * * *

ABSTRACTS

School Lunches,—The Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, recognizing the increasing importance of school lunches, offers the following recommendations concerning lunchroom personnel and equipment.

1. All persons employed in the lunchroom must be scrupulously clean in person and attire. They should be required to submit to health examinations or procedures which the health or school authorities may see fit to require.
2. The lunchroom and kitchen must be clean and as well equipped as is possible to expect under the circumstances in the particular school, bearing in mind the fact that many schools which are poorly equipped are in need of school lunches from the standpoint of nutrition and education.
3. There must be present and in constant use the following equipment: a stove of such capacity as will furnish abundant heat for cooking and for heating large amounts of water; a place to wash dishes where they may be scalded with water over 170 degrees F. and allowed to dry; a supply of dishes and utensils sufficient to permit good practice in the handling of food; a clean, tight cupboard for the storage of dishes and utensils used in cooking; a supply of kitchen linen or its paper substitute great enough to permit sanitary handling of the food, and an icebox, if such is at all possible.
4. Food low in prices is permissible, but it must not be fermented, decomposed, frostbitten, unclean or of unsanitary quality. Mild milk should be pasteurized; if not, it should be boiled on the premises. If powdered milk is used, it must be mixed with safe water within an hour or two of the time it is to be used.
5. The housekeeping of the kitchen and lunchroom must be above criticism. Particular attention should be given to

the exclusion of lice, rats, mice, roaches, flies, and other vermin. Containers which are vermin-proof must be provided when it is impossible to eradicate these nuisances.

6. The personnel and equipment must be under the supervision of some responsible person trained for the work—school physician or teacher, school nurse, or principal—who will have authority to order the abatement of a condition which may be dangerous. This responsible person shall decide whether a lunchroom worker is or is not fit to work on any given day. He shall take into consideration the following points and such others as seem pertinent or necessary to insure safety to the persons eating the school lunch.
   a. Is the individual clean in person and clothing?
   b. Is there suspicion that the worker is suffering from some communicable disease? If so, he should be examined by a physician or health officer who, in turn, should inform the administrative head of the school regarding the possible transmission of the disease. He should not be permitted to return to work after sickness or absence of undetermined cause until seen by a physician.
   c. Is there any infectious disease, such as scarlet fever, in the home of the worker?
   d. Is there any skin disease or discharging wound?

The close co-operation of lunchroom directors, principals, and school physicians is required if school eating places are to be safe. These individuals working together can see that sanitary precautions are taken and thus prevent the spread of disease through food. From the Bulletin to the Schools. The University of the State of New York, Vol. 28, No. 10. June, 1942.

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Masturbation,—The subject of masturbation in boys of high school age is considered quite differently from a generation ago. At that time, it was supposed to be the cause of serious injury to the body, the mind, and the spirit.

Practically all authorities are now agreed that it is much less serious than was formerly supposed, and there are now many authorities who believe that it is not serious at all unless it so conflicts with the boy's training and ideals as to cause him to feel seriously degraded and to cause him to worry and possibly to develop some sort of anxiety psychosis.

Standard textbooks of genitourinary disease for the most part

treat the practice as being a dangerous one, but today many are strongly of the opinion that those taking this view are simply repeating the conventional teaching of the past. Probably it is better simply to regard masturbation as an emotional release. Certainly it is safer for a boy to practice masturbation than for him to participate in illicit sexual relations.

If we suppose that the practice is seriously wrong, still the problem as to what can be done about it is unanswered. The claim that exercise, recreation or heavy employment will remove the desire to masturbate is utterly foolish, because the desire arises mainly when one is in bed, and at such a time one cannot of course be indulging in hard work. As a matter of fact, moderate degrees of fatigue in some persons seem to serve as a mild sexual stimulant.

A healthy boy in a good home, loved and well cared for by his parents will rarely, if ever, injure himself by masturbation unless he has been taught that he has degraded his body, lost his soul, and undermined his intellect.

The school physician should realize that whatever he does or tries to do, whatever his opinions may be, the practice will continue. Where such practice is in the scope of what may be considered normal he will probably do well to ignore the question. Where groups of boys are involved or in instances which seem to be abnormal, special consideration will be required. Journal of the A. M. A. Volume 120, No. 5, October 3, 1942. Abstracted by C. H. Keene.

* * * * *

School Health Survey,—The Louisiana board of health recently completed a survey to determine health needs among school children of the state. A report points out that while the group examined was small it does reflect all strata of the population of the state. A total of 779 children, of whom 353 were white and 426 were colored, was examined in seventeen parishes of the state. The examination included a general physical examination to determine nutritional status and general health conditions, a thorough dental examination, vision and hearing tests, and laboratory tests. It was found that 44 per cent of the group were judged as undernourished, 56 per cent needed some treatment or the removal of tonsils, 86 per cent had dental defects in need of correction, 10 per cent had visual defects in need of correction, 25 per cent showed defective hearing, 33 per cent had poor posture, 24 per cent of feces specimens submitted were found with intestinal parasites of one kind or another, 6 per cent of the colored

children were found with syphilis and 5 per cent had doubtful reactions. None of the white children had positive serologic reactions for syphilis. In connection with the survey, 14,665 chest roentgenograms were made on grammar, high school and college students, resulting in the detection of 7 significant cases of tuberculosis; another 696 showed calcified evidence of the primary type of infection. The report points out that, if the results of this survey are true of the school population as a whole, the school children are not a healthy group and recommends a broadening of present programs in public health and public health education. The Journal of the American Medical Association, May 9, 1942; Vol. 119, No. 2; p. 196.

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North Carolina Free of Brucellosis,—The U. S. Department of Agriculture announced on July 6 that North Carolina is the first state to be officially designated as a modified accredited Bang's disease free area. This state also was the first in which all counties were declared practically free of bovine tuberculosis in 1928. The last ten counties in North Carolina were among the 28 added to the areas officially designated as modified Bang's disease free areas by the U. S. Bureau of Animal Industry and co-operating state officials, July 1. These counties are in 12 states and contain approximately three hundred and seventeen thousand dairy and breeding cattle 6 months of age and older. With this latest addition the "modified" area includes a total of five hundred and fifty counties in twenty-four states. Bang's disease (brucellosis) eradication work is being conducted on the area plan in about one hundred and sixty additional counties. A county may be officially designated as a modified accredited area when a test for Bang's disease has been applied to all cattle 6 months of age or older, except steers, and the percentage of reactors to the last test does not exceed 1 per cent of the cattle and the infected herds do not exceed 5 per cent of the total number. When a county meets these requirements it may be declared a modified accredited Bang's disease free area for three years. Journal of the American Medical Association, Sept. 19, 1942, Page 217.

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School Programs Adapted,—The City Department of Health, City of New York, has during the past year assumed new responsibility for the control of special programs in schools for orthopedic, caridac, and under-par children in the elementary schools serving as an approving agency for changes in the regular school routine for children with physical defects. The Department will attempt

to interpret to teachers recommendations from physicians, will observe the certain adjustments of children on special school programs, and will keep the physicians informed of these adjustments. The programs in the elementary school for orthopedic, cardiac, and under-par children can now be planned around the specific recommendations of the physicians who are treating the children. Under the setup whereby the schools are prepared to adapt their programs, children will be excused from the regular physical training programs for a substitute period of study or rest; if necessary, the luncheon period will be lengthened by fifteen to thirty minutes; and children will be provided with two sets of books, one to be kept in the home, thus making it unnecessary for the child to carry books to and from the school. Children with an intelligence quotient above 75 who are unable to come to school will be given home instruction if their physical condition permits. The City Department of Health announces that these adaptations of the school program are at the service of the private and clinic physician, who may prescribe them for his young patients as readily as he does a medication, a diet, or a home routine for rest. Recommendations for the under-par child will be made on the regular school health referral form. The Journal of the American Medical Association, Vol. 120, No. 6, October 10, 1942, Page 463.

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Plea for Pasteurized Milk,—With provisional statistics for 1941 revealing an increase of more than 40 per cent, over 1940, in the State's case reports of undulant fever, it would seem advisable for the affected communities and counties to direct special wartime efforts at the control of this disease. Safeguarding human resources is essential to victory, and promoting strong civilian health is a responsibility of the civilian groups themselves. Local officials might well take a tip from the Army with regard to preventing the spread of such milk-borne diseases as undulant fever. According to strict military regulations soldiers in camp are served only *pasteurized* milk, and only the best available grade. The exclusive use of *pasteurized* milk is the only known means of reliable protection against milk-borne undulant fever and is in general the most practicable method by which the individual may prevent his own infection with the disease.

During the ten years from 1931 through 1940 there have been reported to the Illinois Department of Public Health a total of 1,328 cases of undulant fever, and 47 deaths in the State have been ascribed to this cause. Preliminary figures for 1941 show

that 221 cases were reported in Illinois, an increase of 66 over the 155 cases reported in 1940.

There are a number of ways, of course, in which people can contract this disease. Undulant fever may be transmitted to human beings by drinking raw milk from infected cattle or goats; by contact with cattle suffering from Bang's disease; or by handling the carcasses of infected animals.

In New York City during 1941, four cases of undulant fever occurred among 220 employees of one of the large hog-packing houses. On investigation it was found that these men had been engaged in pulling the hair from the hide of the carcass after it had been dipped in a hot rosin solution for ten seconds. No cases were reported where the steam method of hair removal was used. In Topeka, Kansas, several cases of undulant fever were tracked back to the use of *raw milk* in a school cafeteria. And many instances have been recorded of farmers contracting the disease after handling *"sick" cattle.*

Which one of these causes was responsible for the cases of undulant fever in Illinois in 1941? It is doubtless significant that of the State's 134 cases reported outside of Chicago in 1940, fully 107 or about 80 per cent occurred in persons who used raw milk. And during the first ten months of 1941, raw milk was used by 134 of the 166 people outside of Chicago whose cases of undulant fever were reported.

The complete eradication of milk-borne undulant fever would require the exclusive use of pasteurized milk, and the elimination of all cattle suffering from Bang's disease (contagious abortion). Sometimes cattle become infected, and the organisms get into the milk, before the farmer is aware that the animals are ill. This is another argument in favor of pasteurization. Pasteurized milk is or can be made available in each urban community of the State. Farm families can pasteurize their milk supplies in the home. Illinois Health Messenger, February 1, 1942.

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School Health Program in Wartime.—Whatever economies school boards may engage in as policies imposed by the emerging war economy, health services are the last which should suffer. There are, in fact, numerous reasons why health and physical education programs should be broadened and instruction in these areas be extended to every grade. Every child should enjoy that vigor of good health both of body and mind that will overcome the present enormous wear, and that will build up good habits and

right attitudes for adult life.

In this enterprise as in so many other branches of educational service, the help of doctors and of public health authorities cannot be relied upon as in peacetimes. It is stated that one-fourth of the physicians of the country are in the war service and that many school physicians have been called. In this emergency, the ordinary teachers, the principals, and the superintendents must take over and make their instruction, their daily health inspection, and above all, their personal interest in their individual pupils more real and effective than in peacetimes.

President E. Kleinschmidt, M.D., of the American School Health Association, recently said: "Fatigue, worry, fear, nervous strain, excitement, unnatural routines, the effect of strange environments, insufficient sleep, lack of exercise—all these are the precursors of abnormalities peculiar to wartime. We recognize full well that childhood anxiety can be as devastating as disease itself. The effect on children of radio dramas, concerning the war and war news is already evident in terms of sleeping disturbances, nervousness, unnatural fears, and anxieties. While very few reports have as yet appeared in the American literature, we have reason to believe, judging from the experience of our English confreres, that fatigue occasioned by physical and emotional stress in wartime is one of the most important health problems facing us today. Moreover, lack of parental surveillance and ordinary disciplinary measures often bring in their wake delinquency and a new freedom for children which offers dangerous possibilities unless steps be taken to provide natural outlets for youthful energies. The need for well-organized programs of recreation for children was never more pressing. As physicians we should bear in mind also that we have an obligation to preserve the child's sense of security which after all is his greatest need."

The United States Office of Education Wartime Commission admonishes all who are in charge of children to see that they observe regular habits of sleeping, eating, and exercise. A Children's Bureau Commission on Wartime has called upon the citizens of the United States to: (1) guard children from injury in danger zones; (2) protect children from neglect, exploitation, and undue strain in defense areas; (3) strengthen the home life of children whose parents are mobilized for war or war production; (4) conserve, equip, and free children of every race and creed to take part in democracy.

The problem of wartime child care in the schools is essentially

the responsibility of the school boards and their executives. It requires no argument that our youth must be physically fit if they are to be mentally sound. It is physical and mental vitality that makes a nation strong, to fight in war, and to carry on in peace. The American School Board Journal, Vol. 105, No. 5, November, 1942, pp. 44-45.

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Tuberculosis Control.—The twenty-two years between 1882 and 1904 are the most pregnant period in the history of tuberculosis. With Koch's discovery of the tubercule bacillus on March 24, 1882, there ensued a period of trial and error out of which grew the program of the National Tuberculosis Association.

Much of the period is characterized by the necessity for clearing up many of the preconceived notions about the disease. Trudeau in 1885 gave the death blow to the idea of a specific climate and therapeutics in the treatment of the disease.

Biggs in 1887 began his work on the contagiousness of the disease and Von Ruch carried on the work of Trudeau in his private sanatorium in Ashville, North Carolina. In 1889 Biggs outlined the campaign against tuberculosis which came to be known as the American Plan.

Koch's announcement in 1890 of tuberculin as a specific for the disease delivered a blow to the control efforts developed up to that time. Not disheartened by this, however, Biggs in 1891 carried on a popular educational campaign in New York City by the use of anti-spitting cards in street cars. Tuberculin testing of cattle began the following year.

In 1882 began the organized effort between professional and lay workers when Flick developed the Pennsylvania Society for the Prevention of Tuberculosis, the first of its kind in the world. This later greatly influenced the pattern for the National Tuberculosis Association.

In 1895 Roentgen's discovery of the X-ray placed in the hands of the medical profession the means for early and accurate diagnosis of the disease.

In 1897, through the efforts of Biggs, laws for compulsory notification of tuberculosis were passed in New York.

In 1898 Theobald Smith isolated the bovine tubercle bacillus and John G. Murphy employed artificial pneumothorax in the treatment of tuberculosis, independently of the work done by Forlanini since 1894.

The State Sanatorium at Rutland, Massachusetts, was estab-

lished in 1898, the first sanatorium in the United States. Clinics were opened in New York City by Bermingham in 1894 and John B. Huddleston in 1903.

In 1900 we find the first attempt to organize against tuberculosis on a national front, and following the lines of the Flick organization, in the formation of the American Congress on Tuberculosis. A schism occurred in 1902 and a second organization came into existence, the American Anti-Tuberculosis League.

The Committee on Tuberculosis of the New York Charity Organization Society was organized in 1902, and the experience gained here finally molded the pattern for the National Association in 1904.

Two additions were made to the fight against tuberculosis in 1903—the use of visiting nurses in tuberculosis homes by Sir William Osler and the founding of the Henry Phipps Institute for the study and Prevention of Tuberculosis.

Thus, step by step, was erected the foundation upon which the National Tuberculosis Association was built. The inherent problem arising from the desire of the medical profession for the scientific pursuit of treatment and the desire of the lay public to put to practical use the knowledge accumulated was not completely solved at this time. It kept cropping up for many years until now the *modus vivendi* seems to have been achieved. Abstract of paper presented by Dr. Robert G. Paterson, Executive Secretary of the Ohio Public Health Association, Columbus, at the Annual Meeting of the National Tuberculosis Association in Philadelphia, May 7, 1942. The Contact—June, 1942—Page 12.

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NOTES

Physical Hardening Program.—The board of regents of the University of Michigan, Ann Arbor, has approved a physical hardening program which is compulsory for all men students with the beginning of the fall term. Formerly the program was compulsory only for students who had joined one of the enlisted reserve programs or were registered under the Selective Service System. The men students will be required to participate in three ninety minute sessions weekly with the emphasis on calisthenics, obstacle races, swimming, and a variety of competitive activities designed to produce physical fitness. All students taking the course undergo physical examinations, and the activities in which they engage are determined by the physician's report. Journal of the American Medical Association, Vol. 120, No. 5, October 3, 1942.

Decontamination of Eyes After Exposure to Lewisite.—The Chemical Warfare Service now recommends a single instillation in the eyes of a 0.5 per cent solution of hydrogen peroxide as soon as possible after contamination with lewisite. This solution may be prepared by diluting one part of a 2 per cent solution with three parts of water, or one part of a 3 per cent solution with five parts of water. The solution usually found in drug stores is the U. S. P. strength of 2.5 to 3.5 per cent hydrogen peroxide. A 0.5 per cent solution of potassium permangenate has also been found effective as an eye instillation following exposure to lewisite. Journal of the American Medical Association, Vol. 118, No. 16, April 18, 1942, pp. 1374.

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Obesity,—Excessive weight has long had extraordinary interest. Recently Willoughby in a survey of the literature, found only 16 instances of persons weighing 700 pounds or more. Of these, 10 were men and 6 were women. The heaviest man weighed more than 1,000 pounds and the heaviest woman, 850 pounds. His report of the case of a woman weighing more than 700 pounds is principally to present a formula of what he calls an index of "relative obesity" whereby fatness may be rated. In other words, the height must be considered as well as the weight so that the classification index relates the width of the body to the height. Judging by this index, Willoughby believed that the subject he reports, a 35 year old woman weighing about 800 pounds, is the fattest human being known at the present time and possibly of all time. The observations are based on the subject when weighing 772 pounds with a stature of 5 feet 5½ inches. Willoughby believes it is evident that every possible fat favoring factor combined to produce this person's unique bulkiness of figure, including heredity, exceptionally large appetite and likewise a constitutional metobolism which was abnormally efficient in producing and storing fat. Journal of the American Medical Association, September 12, 1942, Page 128.

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Conditioning,—Training on the new 530-yard obstacle course of Purdue University, stamped by qualified experts as being as demanding as any in use by the armed services, provides one of the main highlights of the conditioning activities. Fifteen different types of obstacles must be overcome by the students in making the rounds of the course, which covers a hilly, wooded area alongside the Ross-Ade stadium. The obstacles include hurdles, jumps, wall-scaling, rope-swinging across a gully, hand over hand progress on overhead parallels, running through a rope maze, ascending and

descending ladders, tunnels, and more obstructions that force the student to proceed on all fours. The conditioning activities also include competitive team games.

In swimming, fifty volunteer instructors, including many members of the varsity squad, are assisting staff members. The program is so arranged that it includes everything from teaching fundamentals to beginners to advanced life-saving for students who have progressed far enough in their training.

The spacious Purdue fieldhouse has been utilized to full advantage in providing indoor facilities for the recreational activities. Nine badminton courts and eight paddle tennis courts have been laid out on the floor, and it is not at all unusual to find 70 students at play in the area at one time.

Statistics compiled by Prof. F. R. Eastwood, of the division of physical education for men, at the conclusion of the first course over a year ago which indicated that a distinct improvement in physical well-being could be obtained, have been more than borne out by the results of work in subsequent terms.

In the original course, the average percentage of improvement of the students in measurable events was 168 per cent. The cumulative effects of continued training have been more than evident since that time.

The average number of pull-ups of which students were capable at the start of the fall term September, 1941 was 4.89. By the end of the term, the number had risen to 7.96, and added work during the spring term pushed the average up to 9.65.

Push-ups provide another example of steady improvement. Starting with a 15.77 average in the fall term, there was a rise to 23.15 at the end of the first 16 weeks and to 26.5 at the end of 32 weeks.* Purdue Athletic News. *The United States Army Physical Standards call for—minimum 20, average 25, above average 30, superior, 35.—Ed.

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REVIEWS

"Teaching Athletic Skills in Physical Education," by *Henry C. Craine.* Inor Publishing Co., New York, 1942, pages 235.

"What incentives can we offer to American youth to keep themselves fit?" In an effort to answer this question the author first expounds a philosophy and attempts to lay the basis of the educational factors involved in good teaching and for class facilities and organization. The bulk of the materials has to do with an analysis of the skills involved, of the elements of the games and with tests for measuring the various types of skills.

Chapters deal with the game elements and skills of Soccer, Touch Football, Basketball, Volleyball, Softball, Track and Field, Tennis, and Golf. In each chapter, games related to the one under consideration are discussed. Each game chapter closes with a list of "Practical Hints" and with a Bibliography relating to the games involved. C. H. Keene.

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"College Textbook of Hygiene—Supplement,"—*Dean Franklin Smiley, A.B., M.D.,* and *Adrian Gordon Gould, Ph.D., M.D.* The MacMillan Co., New York, 1942—pages 86. Price, $1.00.

This supplement is devoted to Military Hygiene, Civilian Defense, and War-Time First Aid. The authors hold commissions in the Medical Corps of the U. S. Naval Reserve and the U. S. Army. While necessarily condensed, the material is well and interestingly handled. C. H. Keene.

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"The Research Quarterly," May, 1942. American Association for Health, Physical Education, and Recreation, Washington, D. C. Pages 256.

This particular issue of the Research Quarterly is devoted almost entirely to various tests and measurements in physical education. Some qualitative and quantitative measures of physical improvement are badly needed. C. H. Keene.

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Summary of a Ten-Year Mantoux Program in Rural Minnesota, by L. S. Jordan, M.D.

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MEETINGS

Postponed: The annual meetings of the American School Health Association and of the College Physical Education Association, annually held during the Christmas - New Year holidays have been cancelled. The Physical Education Association is organizing regional meetings of which notice will be given later.

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